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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/803,807

03/17/2004

Shih-Tsung Chen

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5599

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7590

09/25/2006

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EXAMINER

HOFFBERG, ROBERT JOSEPH

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/803,807	CHEN, SHIH-TSUNG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Robert J. Hoffberg	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-10 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

**Detailed Action**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-5 and 7-10 have been considered but are moot in view of the new ground(s) of rejection.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the securing means of the housing to the computer chassis (claim 14), the CPU (all claims), power supply unit (the power supply #21 is the same as the chassis #2) (all claims), the unpartitioned chamber (claim 15) and the screen (claim 10) must be shown or the feature(s) canceled from the claim(s). The No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claim 4 is objected to because of the following informalities: change "thermal" to "heat". Appropriate correction is required.
4. Claim 10 is objected to because of the following informalities: change "the window" to "the first window". Appropriate correction is required.
5. Claim 15 is objected to because of the following informalities: change "power supply" to "a power supply". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. "[T]he housing is configured to snap over and secure the heat sink to the housing". The applicant's specification in para. 16 discloses that "the housing 11 so that it can snap in place over the heat sink 10 and fan 12." The specification does not disclose the means that the housing is secured to the computer

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chassis. Examiner is interpreting as the housing snaps over the fan and the heat sink and is secured by a different (undisclosed by the applicant) means to the chassis.

8. Claims 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The "single, unpartitioned chamber of the chassis" (claim 15) was not previously disclosed in the originally filed application.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 7-9, 13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diemunsch (US 6,094,345) in view of Moore (US 5,982,616).

With respect to Claims 1, 3-4 and 7-8 Diemunsch teaches a cooling apparatus for a computer (#10) comprising: a fan (#26) for dispersing heat transferred to the heat sink (#23) installed over a CPU (#22) and to transfer heat therefrom, wherein the fan is configured to direct an airflow ("C") over a power supply (#24) installed within the computer to remove heat therefrom; and a housing (#25) adapted to substantially enclose the heat sink and the fan and configured to be installed adjacent to a window (#18) in a computer chassis such that the fan can direct airflow through the heat sink

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and out the window (claim 1), the fan is configured to face (see Fig. 2) the power supply (claim 7), the heat sink comprises a plurality of cooling fins (see Fig. 3) (claim 8).

Diemunsch fails to teach a conductive base and a heat conductor. Moore teaches a conductive base plate (#28 and #76) configured to be installed over a CPU (#24) and to transfer heat therefrom; a heat conductor (#78) thermally coupled to the base plate adapted to carry heat transferred to the base plate by the CPU away from the base plate; a heat sink (#82) thermally coupled to the heat conductor for dissipating heat carried by the heat conductor (claim 1), the heat conductor comprises a plurality of heat pipes (#78), each heat pipe connected to the heat sink through a hole (see Fig. 5) to facilitate heat exchange therebetween (claims 3 and 4), the heat pipes contain a liquid (Col. 4, line 14) for transferring the heat contained within the heat pipe (claim 5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Diemunsch with the heat pipe of Moore for the purpose of cooling the CPU without the flow of air (Abstract, line 17).

With respect to Claim 2, Diemunsch in view of Moore discloses the claimed invention except for the form factor of the computer chassis. It would have been an obvious matter of design choice to have the computer chassis to be any size including a small form factor, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

With respect to Claim 9, Diemunsch in view of Moore discloses the claimed invention except for cooling fins being made from copper or compression molded

aluminum. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the cooling from a good heat conducting material as copper or compression molded aluminum since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claim 13, Diemunsch teaches a method of cooling the interior of a computer chassis (#10) including a CPU (#22) and a power supply (#24), the method comprising: transferring heat generated by the CPU to a heat sink (#23) through a base member installed adjacent to the CPU and a cooling pipe connected to the heat sink; drawing airflow ("C") into the chassis over the heat sink through a fan (#26) installed adjacent to a first window (#17) in the chassis, the heat sink and fan substantially enclosed in a housing (#25) secured to (see Fig. 1) the chassis; and directing airflow over the power supply and out a second window (#18) in the chassis. Diemunsch fails to teach a base member and a cooling pipe. Moore teaches a base member (#28 and #76) installed adjacent to the CPU (#24) and a cooling pipe (#78) connected to the heat sink (#82). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Diemunsch with the heat pipe of Moore for the purpose of cooling the CPU without the flow of air (Abstract, line 17).

With respect to Claims 15-16, Diemunsch teaches cooling apparatus for a computer chassis (#10), the apparatus comprising: a base plate installed adjacent to a CPU (#22) for removing heat generated therefrom; a heat sink (#23) coupled to the base plate through a heat pipe, the heat sink for dissipating heat from the base plate;

and a fan (#26) for drawing air ("C") through a first window (#17) in the chassis and over the heat sink and power supply (#24) to remove heat therefrom, the air to be dispelled out a second window (#18) in the chassis, wherein the CPU and power supply are stored in a single, unpartitioned chamber (see Fig. 1) of the chassis (claim 15) and a housing (#25) adapted to cover the heat sink and fan and configured to be installed adjacent to the first window (claim 16). Diemunsch fails to teach the second window perpendicular to the first window, a base plate and a heat pipe. It would have been an obvious matter of design choice to have the second window in any relationship to the first window including perpendicular, since applicant has not disclosed that the second window's placement solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with an air flow path that allows cooling of heat generating components to maintain them within their operating temperatures. Moore teaches a base plate (#28 and #76) and a heat pipe (#78). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Diemunsch with the heat pipe of Moore for the purpose of cooling the CPU without the flow of air (Abstract, line 17).

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diemunsch (US 6,094,345) in view of Moore (US 65,982,616) as applied to claim 1 above, and further in view of Yin (US 5,586,865).

Diemunsch in view of Moore teach the claimed invention including a computer chassis (#10) comprising the first window (#18) in the computer chassis and a second window (#17) configured to intake ambient air. They fail to teach a screen over the



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window. Yin teaches a computer chassis (Fig. 1, #10C) comprising the window (Fig. 1, #10P) in the computer chassis, a screen (Fig. 3, #34S) over the window, and a second window configured to intake (Fig. 1, #10V) ambient air. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Chen in view of Lo with the screen of Yin for the purpose of creating a filtered airflow for cooling.

12. Claim 14, as best understood by examiner, is rejected under 35 U.S.C. 103(a) as being unpatentable over Diemunsch (US 6,094,345) in view of Moore (US 65,982,616) as applied to claim 1 above, and further in view of Wyler (US 6,401,807).

Diemunsch in view of Moore teach the claimed invention including the housing secured to (see Fig. 1) the chassis except the housing being configured to snap over and secure the heat sink and fan. Wyler et al. teaches that the housing (#22) is configured to snap over (#32) the heat sink (#14) and fan (#30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Chen in view of Lo with the housing of Wyler et al. for the purpose of providing an efficient means of securing the housing to the heat sink and fan.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Inoue et al. (US 6,311,767) teach a base plate, CPU, a heat pipe, a housing having a fan and a heat sink secured to a computer chassis. Chen (US 2002/0084062) teaches a fan and a heat sink secured to a computer chassis, a CPU, a heat pipe. Lee (US 6,732,786) teaches a housing substantially enclosing a fan and a

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heat sink. Chen (US 2004/0080910) teaches a base plate, CPU, a heat pipe, a heat sink enclosing a fan secured to a computer chassis.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL DATSKOVSKIY  
PRIMARY EXAMINER

RJH *RJH**Michael Datskovskiy*  
09/19/06